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PATENT

S/N 10/018869

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	RINI et al.	Examiner:	Unknown
Serial No.:	10/018869	Group Art Unit:	Unknown
Filed:	18 December 2001	Docket No.:	12243.23USWO
Title:	GLYCOSYLTRANSFERASES STRUCTURES		

CERTIFICATE UNDER 37 CFR 1.10

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I hereby certify that this paper or fee is being deposited with the United States Postal Service 'Express Mail Post Office To Addressee' service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By:

John Junkers

INFORMATION DISCLOSURE STATEMENT (37 C.F.R. § 1.97(b))

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

With regard to the above-identified application, the items of information listed on the enclosed Form 1449 are brought to the attention of the Examiner.

This statement should be considered because it is submitted before the mailing date of a first Office Action on-the-merits. Accordingly, no fee is due for consideration of the items listed on the enclosed Form 1449.

In accordance with 37 C.F.R. § 1.98(a)(2), a copy of each document or other information listed on the enclosed Form 1449 is provided.

No representation is made that a reference is "prior art" within the meaning of 35 U.S.C. §§ 102 and 103 and Applicants reserve the right, pursuant to 37 C.F.R. § 1.131 or otherwise, to establish that the reference(s) are not "prior art." Moreover, Applicants do not represent that a reference has been thoroughly reviewed or that any relevance of any portion of a reference is intended.

Consideration of the items listed is respectfully requested. Pursuant to the provisions of M.P.E.P. 609, it is requested that the Examiner return a copy of the attached Form 1449, marked

as being considered and initialed by the Examiner, to the undersigned with the next official communication.

Please charge any additional fees or credit any overpayment to Deposit Account No. 13-2725.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
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(612)332.5300

Dated: 8 May 2002

By: Curtis B. Hamre
Curtis B. Hamre
Reg. No. 29,165

DPM(CBH)/kjr



Form PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		DOCKET NUMBER: 12243.23.US-WO Application Number: 10/018,869	
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)		APPLICANT(S): James Rini et al	
		FILING DATE: December 18, 2001 GROUP ART UNIT	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
6.		Brunger, A. T., et al (1998). Crystallography & NMR system: A new software suite for macromolecular structure determination. Acta Crystallographica D54, 905-21	
7.		Campbell, J. A., et al (1998). A classification of nucleotide-diphospho-sugar glycosyltransferases based on amino acid sequence similarities. Biochem J 329, 719	
8.		Campbell, J. A., et al (1997). A classification of nucleotide-diphospho-sugar glycosyltransferases based on amino acid sequence similarities [letter] [published erratum appears in Biochem J 1998 Feb 1;329(Pt 3):719]. Biochem J 326, 929-39	
9.	✓	Charnock, S. J., et al (1999). Structure of the nucleotide-diphospho-sugar transferase, SpsA from Bacillus subtilis, in native and nucleotide-complexed forms. Biochemistry 38, 6380-5	
10.	✓	Charuk, J. H., et al (1995). Carbohydrate-deficient glycoprotein syndrome type II. An autosomal recessive N-acetylglucosaminyltransferase II deficiency different from typical hereditary erythroblastic multinuclearity, with a positive acidified-serum lysis test (HEMPAS). Eur J Biochem 230, 797-805	
11.	✓	Christopher, J. A. (1998). SPOCK: The Structural Properties Observation and Calculation Kit Program Manual. In SPOCK: The Structural Properties Observation and Calculation Kit Program Manual: The Center for Macromolecular Design, Texas A&M University, College Station, TX	
12.	✓	Cowan, J. A. (1998). Magnesium activation of nuclease enzymes -- the importance of water. Inorganica Chimica Acta 275-276, 24-7	
13.	✓	Cowtan, K. (1994). Joint CCP4 and ESF-EACBM Newsletter on Protein Crystallography 31, 34-38	
14.	✓	Drickamer, K., and Taylor, M. E. (1998). Evolving views of protein glycosylation. Trends Biochem Sci 23, 321-4	
15.		Dudev, T., et al (1999). Competitive Binding in Magnesium Coordination Chemistry: Water versus Ligands of Biological Interest. J Am Chem Soc 121, 7665-73	
16.		Gastinel, L. N., et al (1999). Crystal structures of the bovine beta4galactosyltransferase catalytic domain and its complex with uridine diphosphogalactose. Embo J 18, 3546-57	
17.		Granovsky, M., et al. (2000). Suppression of tumor growth and metastasis in Mgat5-deficient mice. Nat Med 6, 306-12	
18.		Harpaz, N., et al (1980). Control of glycoprotein synthesis. Bovine colostrum UDP-N- acetylglucosamine:alpha-D-mannoside beta 2-N-acetylglucosaminyltransferase I. Separation from UDP-N- acetylglucosamine:alpha-D-mannoside beta 2-N- acetylglucosaminyltransferase II, partial purification, and substrate specificity. J Biol Chem 255, 4885-93	
19.		Ioffe, E., et al (1994). Mice lacking N-acetylglucosaminyltransferase I activity die at mid- gestation, revealing an essential role for complex or hybrid N-linked carbohydrates. Proc Natl Acad Sci U S A 91, 728-32	
20.	✓	Jaeken, J., et al (1993). The carbohydrate-deficient glycoprotein syndromes: pre-Golgi and Golgi disorders? Glycobiology 3, 423-8	
21.		Jaeken, J., et al (1994). Carbohydrate deficient glycoprotein syndrome type II: a deficiency in Golgi localised N-acetylglucosaminyltransferase II. Arch Dis Child 71, 123-7	
22.		Jones, T. A., et al (1991). Improved methods for building protein models in electron density maps and the location of errors in these models. Acta Crystallographica A47, 110-119	
23.		Kleywegt, G. J., et al (1996). Efficient rebuilding of protein structures. Acta Crystallographica D52, 829-832	
24.		Kornfeld, R., et al (1980). . In The Biochemistry of Glycoproteins and Proteoglycans, W. J. Lennarz, ed.: Plenum Press), pp. 24-25	
25.	✓	La Fortelle, E., et al (1997). Maximum-Likelihood Heavy-Atom Parameter Refinement in the MIR and MAD Methods. Methods in Enzymology 276, 472-494	
26.	✓	McCarter, J. D., et al (1994). Mechanisms of enzymatic glycoside hydrolysis. Curr Opin Struct Biol 4, 885-92	
27.	✓	Merritt, E. A., et al (1994). Raster3D Version 2.0, a Program for Photorealistic Molecular Graphics. Acta Crystallographica D50, 869-873	
28.	✓	Metzler, M., et al (1994). Complex asparagine-linked oligosaccharides are required for morphogenic events during post-implantation development. Embo J 13, 2056-65	
29.		Moller, G., et al (1992). Control of glycoprotein synthesis: substrate specificity of rat liver UDP-GlcNAc:Man alpha 3R beta 2-N-acetylglucosaminyltransferase I using synthetic substrate analogues. Glycoconj J 9, 180-90	
*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

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	30	Morera, S., et al (1999). T4 phage beta-glucosyltransferase: substrate binding and proposed catalytic mechanism. J Mol Biol 292, 717-30	
	31	Murzin, A. G., et al (1995). SCOP: a structural classification of proteins database for the investigation of sequences and structures. J Mol Biol 247, 536-40	
	32	Narasimhan, S., et al (1977). Control of glycoprotein synthesis. Lectin-resistant mutant containing only one of two distinct N-acetylglucosaminyltransferase activities present in wild type Chinese hamster ovary cells. J Biol Chem 252, 3926-33	
	33	Nishikawa, Y., et al (1988). Control of glycoprotein synthesis. Purification and characterization of rabbit liver UDP-N-acetylglucosamine:alpha-3-D-mannoside beta-1,2-N- acetylglucosaminyltransferase I. J Biol Chem 263, 8270-81	
	34	Otwinowski, Z., et al (1997). Processing of X-ray Diffraction Data Collected in Oscillation Mode. Methods in Enzymology 276, 307-326	
	35	Petrova, P., et al (1999). Potential Energy Hypersurfaces of Nucleotide Sugars: Ab Initio Calculations, Force-Field Parameterization, and Exploration of the Flexibility. J Am Chem Soc 121, 5535-47.	
	36	Reck, F., et al (1995). Synthetic substrate analogues for UDP-GlcNAc: Man alpha 1-3R beta 1-2-N- acetylglucosaminyltransferase I. Substrate specificity and inhibitors for the enzyme. Glycoconj J 12, 747-54	
	37	Reck, F., et al (1994). Synthesis of tetrasaccharide analogues of the N-glycan substrate of beta-(1-->2)-N-acetylglucosaminyltransferase II using trisaccharide precursors and recombinant beta-(1-->2)-N-acetylglucosaminyltransferase I. Carbohydr Res 259, 93-101	
	38	Sarkar, M., et al (1998). Removal of 106 amino acids from the N-terminus of UDP-GlcNAc: alpha-3-D- mannoside beta-1,2-N- acetylglucosaminyltransferase I does not inactivate the enzyme. Glycoconj J 15, 193-7	
	39	Schachter, H. (1986). Biosynthetic controls that determine the branching and microheterogeneity of protein-bound oligosaccharides. Biochem Cell Biol 64, 163-81	
	40	Schachter, H. (1991). The 'yellow brick road' to branched complex N-glycans. Glycobiology 1, 453-61	
	41	Sinnott, M. L. (1991). Catalytic mechanisms of enzymic glycosyl transfer. Chem Rev 90, 1170-1202	
	42	Stanley, P., et al (1975). Chinese hamster ovary cells selected for resistance to the cytotoxicity of phytohemagglutinin are deficient in a UDP-N-acetylglucosamine-- glycoprotein N-acetylglucosaminyltransferase activity. Proc Natl Acad Sci U S A 72, 3323-	
	43	Tan, J., et al (1996). Mutations in the MGAT2 gene controlling complex N-glycan synthesis cause carbohydrate-deficient glycoprotein syndrome type II, an autosomal recessive disease with defective brain development. Am J Hum Genet 59, 810-7	
	44	Terwilliger, T. C., et al (1999). Automated MAD and MIR structure solution. Acta Crystallographica D55, 849-61	
	45	Vrielink, A., et al (1994). Crystal structure of the DNA modifying enzyme beta-glucosyltransferase in the presence and absence of the substrate uridine diphosphoglucose. Embo J 13, 3413-22	
	46	Vyas, N. K. (1991). Atomic features of protein-carbohydrate interactions. Curr Opin Struct Biol 1, 732-40	
	47	Wiggins, C. A., et al (1998). Activity of the yeast MNN1 alpha-1,3-mannosyltransferase requires a motif conserved in many other families of glycosyltransferases. Proc Natl Acad Sci U S A 95, 7945-50	
	48	Ullman, C. et al (1997). A classification of nucleotide-diphospho-sugar glycosyltransferases based on amino acid sequence similarities, Biochemical Journal, Vol. 326, pages 929-941	
	49	Kuntz, Irwin, et al (1994) Structure Based Molecular Design, American Chemical Society, Vol 27, No. 5, pages 117-123	
	50	Gschwend, D.A., et al (1996) Molecular Docking Towards Drug Discovery, Journal of Molecular Recognition, Vol 9, pages 175-186	
	51	Sarkar, (1994) Expression of recombinant rabbit UDP-GlcNAc:alpha-c-D-mannoside beta-1,2N-acetylglucosaminyltrasnferase I catalytic domain in Sf9 insect cells, Database Biosis Online, Biosciences Information Service, Vol 11, No. 3, pages 204-209	
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